

## Spatially Periodic System with Infinite Globally Coupled Oscillators Driven by Temporal-Spatial Noise

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**Abstract:** In this paper, we study spatially periodic system with infinite globally coupled oscillators driven by temporal-spatial noise and subject to a constant force. The results show that the system exhibits the phenomena of the non-equilibrium phase transition, transport of particles, and the anomalous hysteresis cycle for the mean field and the probability current.

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**Key words:** temporal-spatial noise, non-equilibrium phase transition, anomalous hysteresis cycle, mean field

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